

REMARKS/ARGUMENTS

Claims Status / Support for Amendments

Claims 1 and 3-17 are pending. Claims 1, 5, 12 and 13 are currently amended. Claim 2 was previously canceled without prejudice. Claims 3 and 4 are withdrawn pursuant to a previous Restriction Requirement. Claims 6-11, 14 and 15 remain as previously presented. Claims 16 and 17 are added.

Claim 1 is amended to clarify that it relates to a non-irradiated modifier in light of the Office's asserted confusion on this matter in the Advisory Action dated June 29, 2010. Amended claim 1 finds support in paragraphs [0004] and [0020] of the specification as well as Table 1 of the specification. Claim 1 is also amended to remove product-by-process limitations which are now presented in new claim 16. Claims 5, 12 and 13 are amended to change dependency from claim 1 to claim 16 in light of the above-noted relocation of some limitations from claim 1 to claim 16. Claim 17 is added and relates to an irradiated modifier. Claim 17 finds support in paragraphs [0004] and [0020] of the specification as well as Table 1 of the specification.

No new matter is believed to have been entered.

§112, 1st paragraph, Rejection

Claims 1, 2 and 5-15 are rejected as lacking support for a modifier, which *after irradiation*, still has an average particle size of 20 µm or more. As independent claim 1 is drawn toward a *non-irradiated* modifier and as the irradiated modifier of independent claim 17 does not include the indefinite/rejected phrase with respect to the *irradiated* particles, Applicants submit that this rejection has been overcome. As such, Applicants request withdrawal of this new matter rejection.

§112, 2nd paragraph, Rejection

Claims 1, 2 and 5-15 are rejected as indefinite because “it remains unclear as to whether applicants are claiming an irradiated, versus non-irradiated, modifier having an average particle size of 20 μm or more.” As independent claim 1 now recites “a non-irradiated modifier for a resin comprising particles having an average particle size of 20 μm or more,” and independent claim 17 recites “an irradiated modifier,” Applicants submit that this rejection has been overcome. As such, Applicants request withdrawal of this new matter rejection.

§102(b)/§103(a) Rejection

Claims 1, 2 and 5-15 are rejected as anticipated by or, in the alternative, obvious in view of Endo (US 6,051,650). Applicants respectfully traverse this rejection.

The claimed invention relates to a non-irradiated modifier for a resin (see independent claim 1) and an irradiated modifier for a resin (see independent claim 17). The non-irradiated modifier (i.e., *before* being irradiated by an ultrasonic wave) is obtained by (i) adding one or more copolymerizable vinyl-based monomers to a rubber latex comprising an acrylic rubber, (ii) graft-polymerizing the copolymerizable vinyl-based monomers and the rubber polymer latex to obtain a graft copolymer having an average particle size of 600 to 900 nm, and (iii) spray-drying the graft copolymer (see claim 16).

As noted above, the claimed invention produces a powder of the graft copolymer by *spray drying* a latex of the graft copolymer obtained by emulsion polymerization. Paragraph [0018] of the specification discusses this spray drying and explains that dispersibility of the powder particles is improved and the particle size distribution is narrowed. More specifically, Applicants submit that the claimed invention provides a modifier which has enhanced dispersibility between the primary and secondary particles of the powder by

processing the latex by spray drying, especially when the primary particles have an average particle size of 600 to 900 nm (see claim 16).

Contrary to the claimed invention, Endo discloses a powder of a graft polymer obtained by *solidifying* a latex of the graft copolymer obtained by emulsion polymerization with the use of aluminum sulfate (see e.g., col. 6, line 44+, and col. 20, lines 28-35).

Applicants submit that when the latex of a graft copolymer is solidified and powdered, the latex of the graft copolymer is heated during the solidifying process and the primary particles of the powder become tightly bonded. Thus, dispersibility between the primary and secondary particles of a powder obtained by solidification is inferior to that obtained by the claimed spray drying process.

A powder obtained by such a solidification process like that of Endo corresponds to Preparation Example 4 (i.e., “IM-4”) of the specification of the present invention (see [0029], [0032] and [0033]). As can be seen in Table 2 of the specification (page 33, [0033]), Comparative Example 2 utilizing the IM-4 powder obtained by a solidification process reports inferior impact strength (i.e., 14 J/m instead of 19-34 J/m) and inferior dispersibility (D=coagulation of rubber observed instead of B=no coagulation of rubber observed).

Accordingly, in light of *at least* (a) Endo not disclosing or suggesting obtaining the powder of the graft copolymer by spray drying a latex of the graft copolymer like that claimed, and (b) Endo not disclosing or suggesting enhanced dispersibility between the primary and secondary particles of the powder obtained by spray drying the latex of the graft copolymer like that obtained by the claimed invention, Applicants submit that Endo neither anticipates nor renders obvious the claimed invention. As such, Applicants request withdrawal of the §102(b)/§103(a) rejection over Endo.

Conclusion

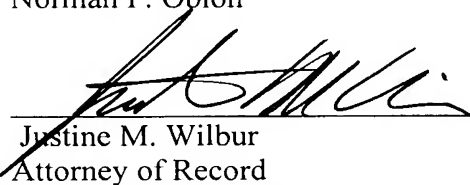
For the reasons discussed above, Applicants submit that all now-pending claims are in condition for allowance. Applicants respectfully request the withdrawal of the rejections and passage of this case to issue.

Respectfully submitted,

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